

# MICROCONTROLLER PROGRAMMABLE SYSTEM ON A CHIP

## ABSTRACT

5           Embodiments of the present invention are directed to a microcontroller device having a microprocessor, programmable memory components, and programmable analog and digital blocks. The programmable analog and digital blocks are configurable based on programming information stored in the memory components. Programmable interconnect logic, also programmable from the memory

10 components, is used to couple the programmable analog and digital blocks as needed. The advanced microcontroller design also includes programmable input/output blocks for coupling selected signals to external pins. The memory components also include user programs that the embedded microprocessor executes. These programs may include instructions for programming the digital and

15 analog blocks "on-the-fly," e.g., dynamically. In one implementation, there are a plurality of programmable digital blocks and a plurality of programmable analog blocks.